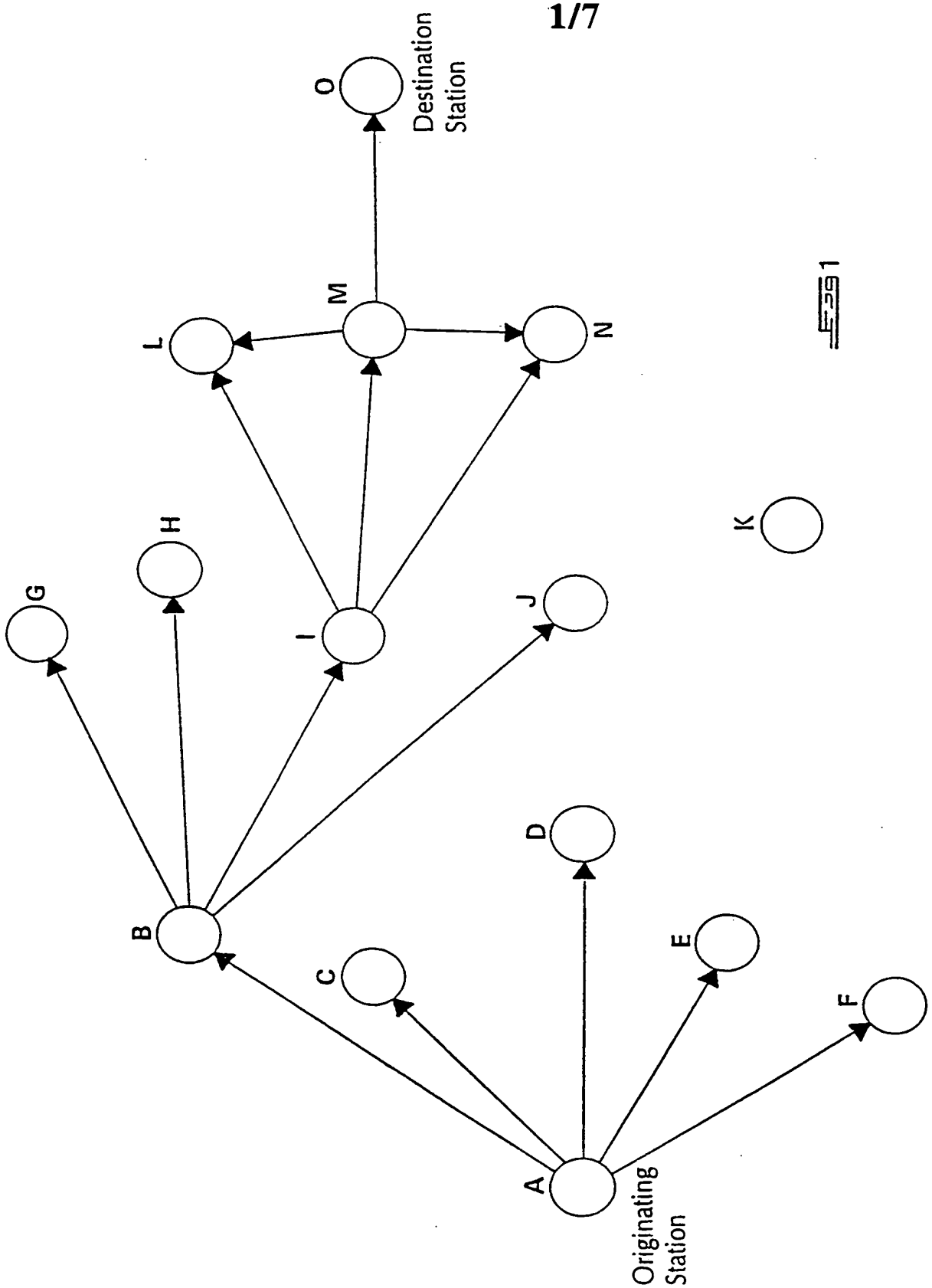

O
Destination Station
M
L
N
K
H
G
I
J
D
B
E
C
F
A
Originating Station

Fig 1

FIG 2

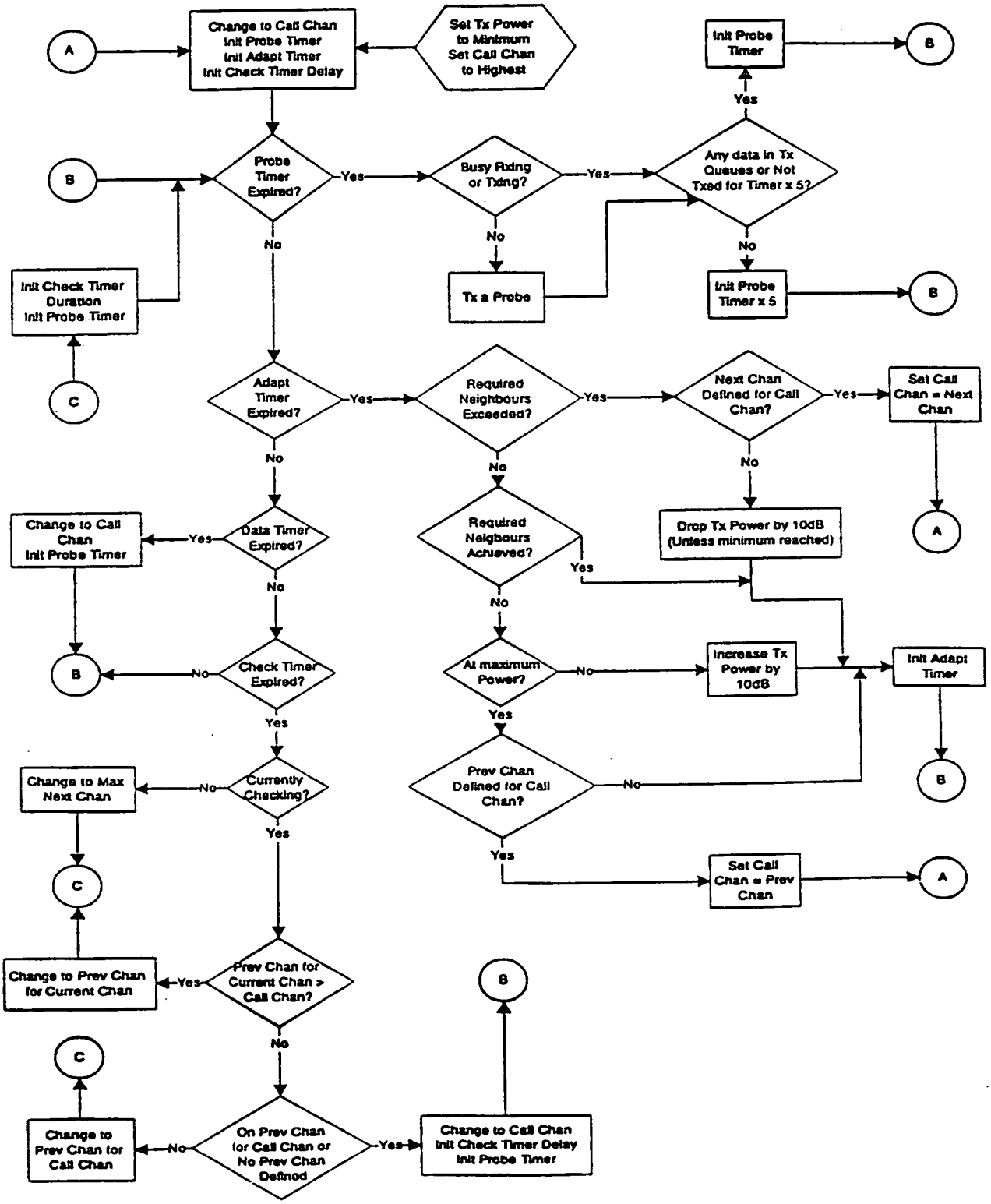

A
Change to Call Chan
Init Probe Timer
Init Adapt Timer
Init Check Timer Delay
Set Tx Power to Minimum
Set Call Chan to Highest
Init Probe Timer
B
Yes
B
Probe Timer Expired?
Yes
Busy Rxing or Txing?
Yes
Any data in Tx Queues or Not Txed for Timer x 5?
No
No
No
Init Check Timer Duration
Init Probe Timer
Tx a Probe
Init Probe Timer x 5
B
C
Adapt Timer Expired?
Yes
Required Neighbours Exceeded?
Yes
Next Chan Defined for Call Chan?
Yes
Set Call Chan = Next Chan
No
No
No
Change to Call Chan
Init Probe Timer
Yes
Data Timer Expired?
Required Neigbours Achieved?
Drop Tx Power by 10dB (Unless minimum reached)
A
Yes
No
No
B
No
Check Timer Expired?
At maximum Power?
No
Increase Tx Power by 10dB
Init Adapt Timer
Yes
Yes
Change to Max Next Chan
No
Currently Checking?
Prev Chan Defined for Call Chan?
No
B
Yes
Yes
C
Set Call Chan = Prev Chan
A
Change to Prev Chan for Current Chan
Yes
Prev Chan for Current Chan > Call Chan?
B
No
C
Change to Prev Chan for Call Chan
No
On Prev Chan for Call Chan or No Prev Chan Defined
Yes
Change to Call Chan
Init Check Timer Delay
Init Probe Timer

Fig 3

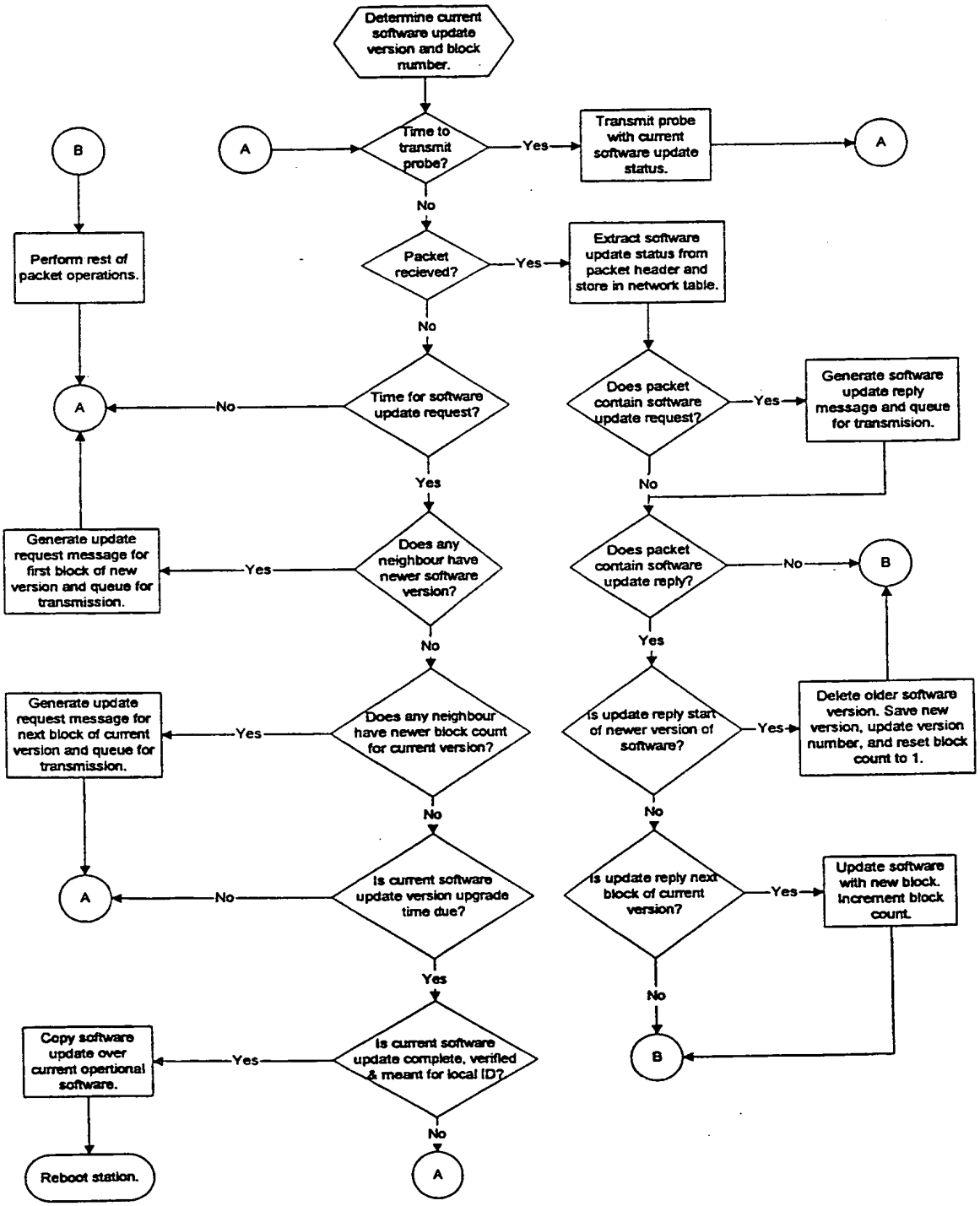
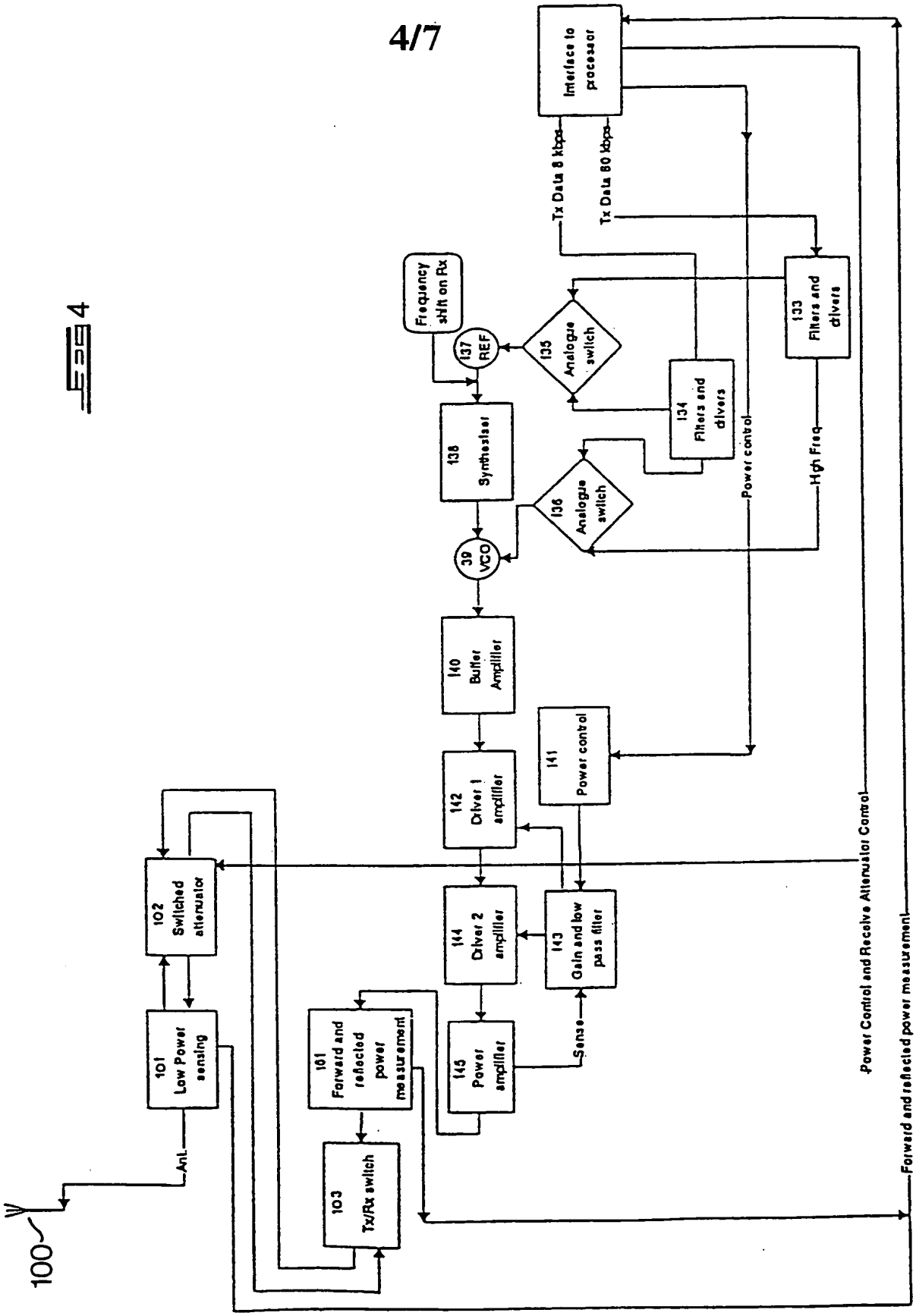

Determine current software update version and block number.
A
Time to transmit probe?
Yes
Transmit probe with current software update status.
A
No
B
Perform rest of packet operations.
Packet recieved?
Yes
Extract software update status from packet header and store in network table.
No
A
No
Time for software update request?
Does packet contain software update request?
Yes
Generate software update reply message and queue for transmision.
Yes
No
Generate update request message for first block of new version and queue for transmission.
Yes
Does any neighbour have newer software version?
Does packet contain software update reply?
No
B
No
Yes
Generate update request message for next block of current version and queue for transmission.
Yes
Does any neighbour have newer block count for current version?
Is update reply start of newer version of software?
Yes
Delete older software version. Save new version, update version number, and reset block count to 1.
No
No
A
No
Is current software update version upgrade time due?
Is update reply next block of current version?
Yes
Update software with new block. Increment block count.
Yes
No
Copy software update over current opertional software.
Yes
Is current software update complete, verified & meant for local ID?
B
No
Reboot station.
A

Fig 4


Interface to processor
Tx Data 8 kbps
Tx Data 80 kbps
Frequency shift on Rx
137 REF
135 Analogue switch
133 Filters and divers
134 Filters and divers
Power control
High Freq
138 Synthesiser
136 Analogue switch
39 VCO
140 Buffer Amplifier
141 Power control
142 Driver 1 amplifier
144 Driver 2 amplifier
143 Gain and low pass filter
145 Power amplifier
Sense
102 Switched attenuator
101 Low Power sensing
161 Forward and reflected power measurement
103 Tx/Rx switch
Ant
100
Power Control and Receive Attenuator Control
Forward and reflected power measurement

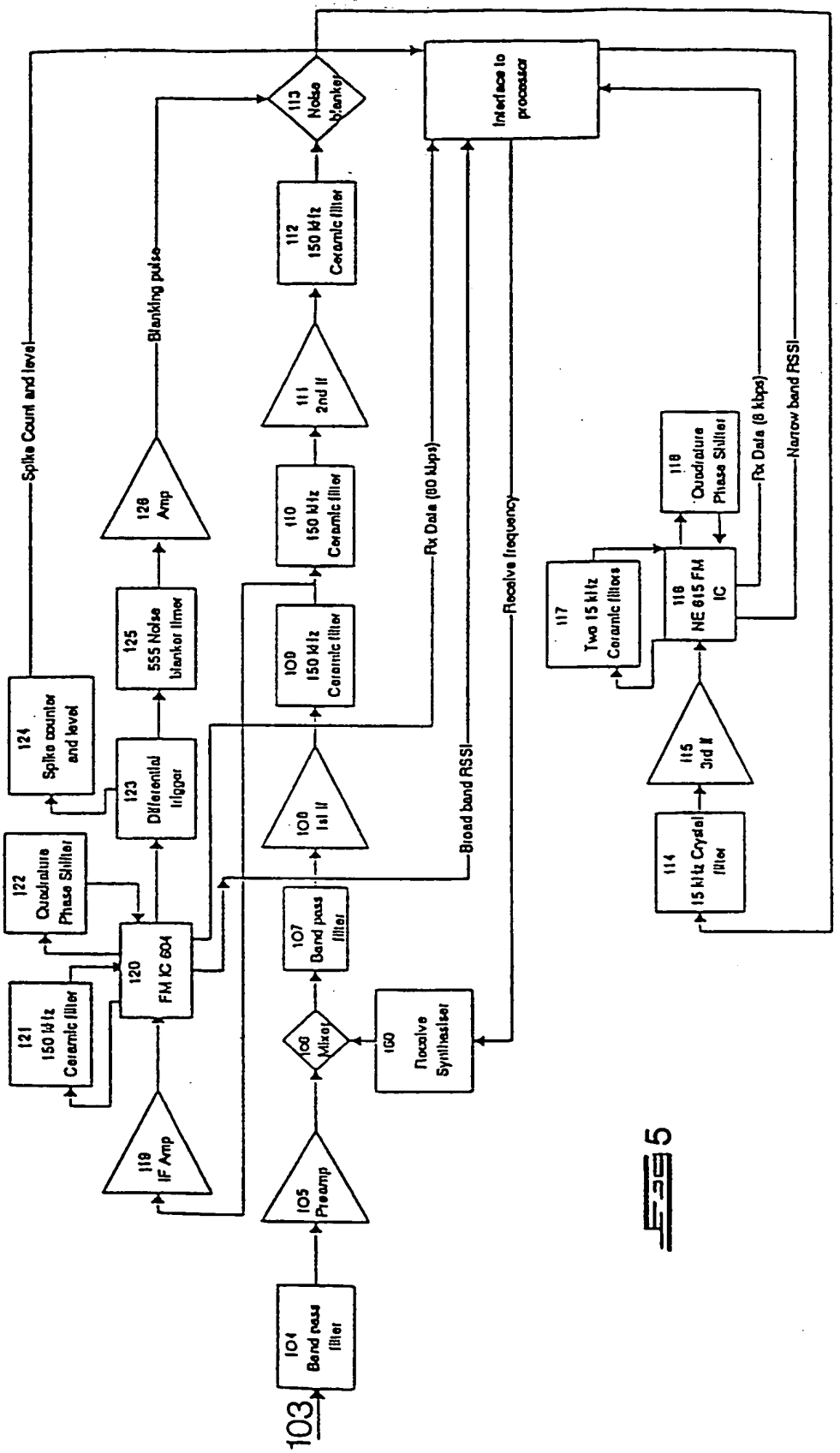

103
104 Band pass filter
105 Preamp
106 Mixer
107 Band pass filter
108 1st IF
109 150 kHz Ceramic filter
110 150 kHz Ceramic filter
111 2nd IF
112 150 kHz Ceramic filter
113 Noise blanker
114 15 kHz Crystal filter
115 3rd IF
116 NE 615 FM IC
117 Two 15 kHz Ceramic filters
118 Quadrature Phase Shifter
118 IF Amp
120 FM IC 604
121 150 kHz Ceramic filter
122 Quadrature Phase Shifter
123 Differential trigger
124 Spike counter and level
125 555 Noise blanker limer
126 Amp
160 Receive Synthesiser
Interface to processor
Spike Count and level
Blanking pulse
Rx Data (80 kbps)
Broad band RSSI
Receive frequency
Rx Data (8 kbps)
Narrow band RSSI

FIG 5

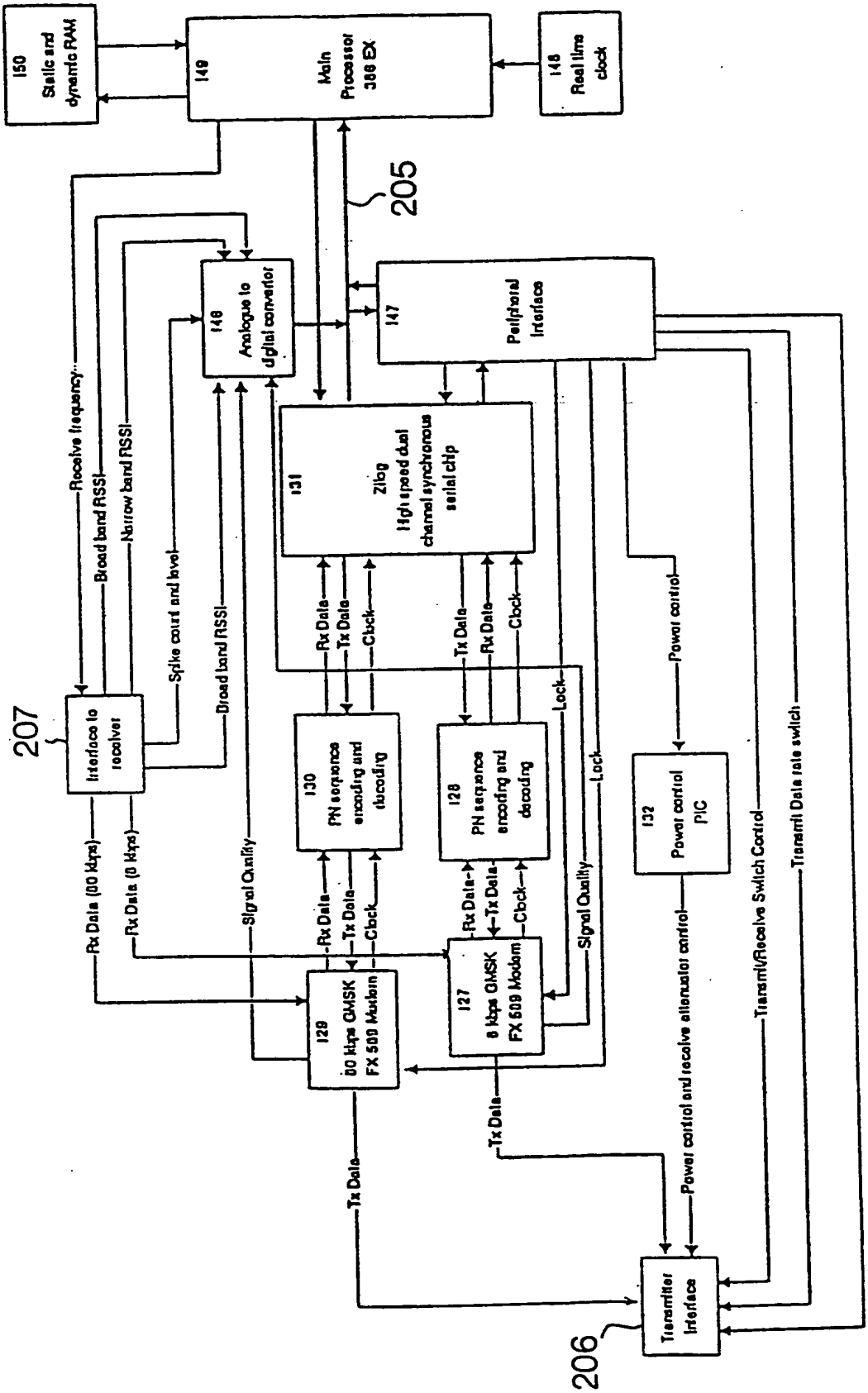

150
Static and dynamic RAM
149
Main Processor 386 EX
148
Real time clock
205
146
Analogue to digital convertor
147
Peripheral Interface
131
Zilog High speed dual channel synchronous serial chip
Receive frequency
Broad band RSSI
Narrow band RSSI
Spike count and level
Broad band RSSI
Rx Data
Tx Data
Clock
Tx Data
Rx Data
Clock
Power control
207
Interface to receiver
130
PN sequence encoding and decoding
128
PN sequence encoding and decoding
132
Power control PIC
Lock
Lock
Rx Data (80 Kbps)
Rx Data (8 Kbps)
Signal Quality
Signal Quality
Rx Data
Tx Data
Clock
Rx Data
Tx Data
Clock
129
80 Kbps GMSK FX 609 Modem
127
8 Kbps GMSK FX 609 Modem
Tx Data
Tx Data
Power control and receive attenuator control
Transmit/Receive Switch Control
Transmit Data rate switch
206
Transmitter Interface

FIG 6

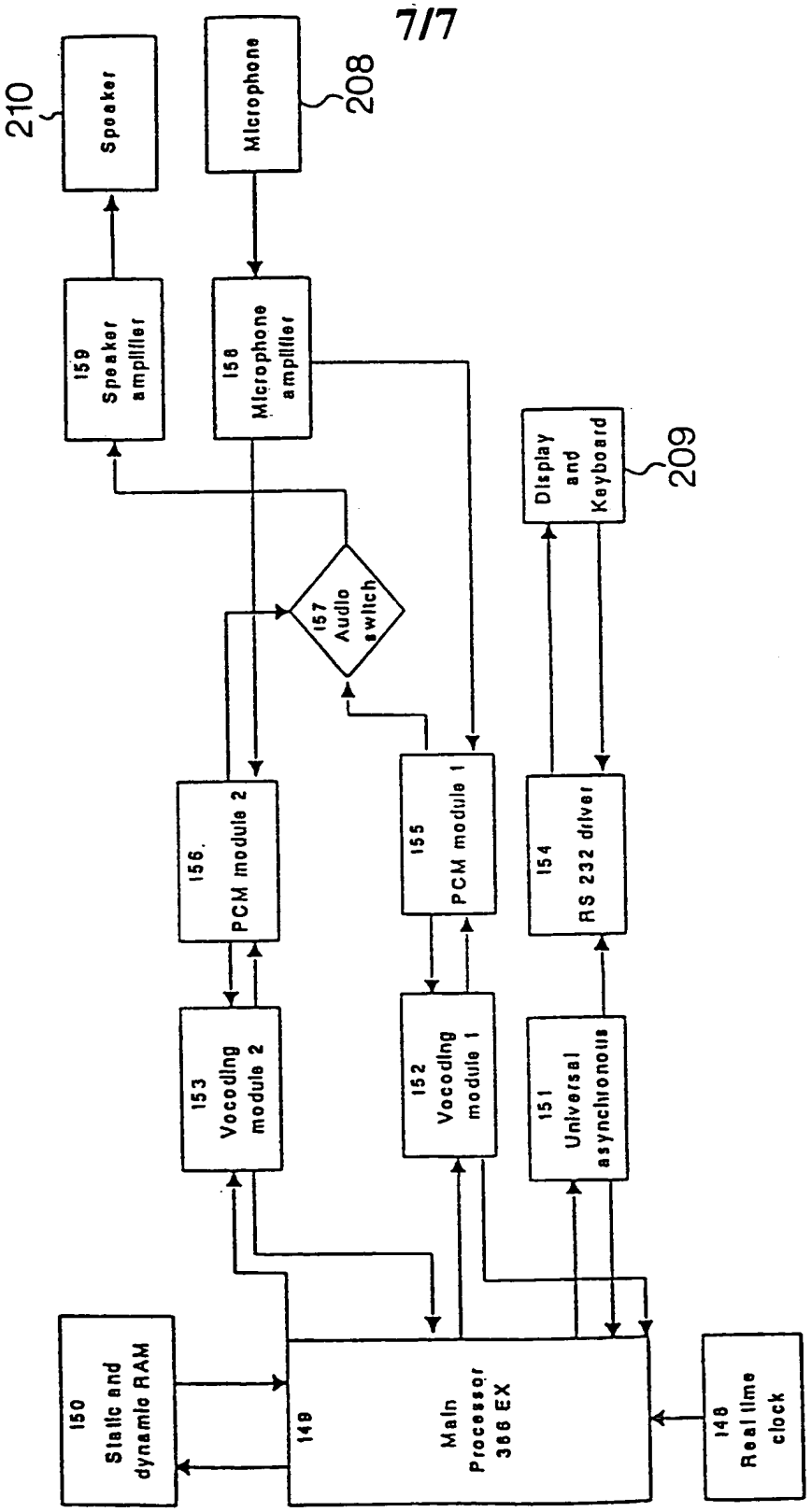

210
Speaker
Microphone
208
159
Speaker amplifier
158
Microphone amplifier
Display and Keyboard
209
157
Audio switch
156
PCM module 2
155
PCM module 1
154
RS 232 driver
153
Vocoding module 2
152
Vocoding module 1
151
Universal asynchronous
150
Static and dynamic RAM
149
Main Processor 386 EX
148
Real time clock

Fig 7